

#### **405 KAR 30:160. Data requirements.**

RELATES TO: KRS 350.600

STATUTORY AUTHORITY: KRS 151.125, 224.033, 350.028, 350.050, 350.600

NECESSITY, FUNCTION, AND CONFORMITY: KRS 350.600 requires the Environmental and Public Protection Cabinet to develop administrative regulations for oil shale operations to minimize and prevent their adverse effects on the citizens and the environment of the Commonwealth. This administrative regulation sets forth various data collection requirements.

Section 1. General. This administrative regulation applies to any person who engages in an oil shale operation with the exception of exploration operations. The extent and duration of data collection will be determined by the cabinet. Such determination will be made based on the proposed activity by the applicant and its potential for adverse environmental impacts on the area to be affected by such activity.

Section 2. Baseline and Background Data Requirements. (1) Any permit applicant shall submit with the application as determined by the cabinet data collected on the following environmental parameters: air quality and climatology, water quality, water quantity, aquatic flora and fauna, terrestrial flora and fauna, and historic, geologic, pedologic, and archaeological features. In the design and operation of the baseline data collection and monitoring programs, the permittee shall strive to collect data for the greatest period of time practicable as approved by the cabinet with emphasis on acquisition of quality data. The permittee shall establish and implement a quality assurance program approved by the cabinet to assure high quality data collection. This quality assurance program shall include but not be limited to: quality control by standard reference materials such as those available through the National Bureau of Standards; data validation through established criteria of acceptability; method and frequency of calibration and maintenance; and testing programs to identify and quantify data anomalies.

(2) Air quality and climatology monitoring by the applicant shall be in accordance with KRS Chapter 224 and the administrative regulations promulgated pursuant thereto.

(3) Surface water monitoring by the applicant shall include monitoring sites established on major streams, upstream and downstream from anticipated sources of pollution including adjacent impacted tributaries. Seasonal sampling (winter, spring, summer, and fall) is required with a minimum of six (6) samples taken in each affected perennial stream per year. A minimum of two (2) samples shall be taken during high flow and a minimum of two (2) samples shall be taken during low flow. Sampling for metals, organic compounds, and water quality assessment shall be performed during low flow periods. Sampling of intermittent streams shall be during the maximum flow regime. The sampling parameters for intermittent streams shall be recommended by the applicant and approved by the cabinet. All sampling shall be performed by qualified personnel and the analyses performed by a qualified laboratory. The number and location of sampling sites shall be recommended by the applicant for approval by the cabinet.

(4) Water sampling parameters shall include but not be limited to the following:

(a) Physical parameters monitored will include: total dissolved solids or specific conductance, total suspended solids, and temperature.

(b) Chemical parameters will include ph, acidity, alkalinity, sulfate, iron, manganese, silver, arsenic, barium, cadmium, chromium, mercury, lead, selenium, nickel, molybdenum, vanadium, boron, fluorine, copper, total organic carbon (TOC), total phenols, inorganic carbon, cyanides, sulfides, ammonia, and thiocyanates.

(c) Biological parameters will include biochemical oxygen demand (BOD) and chemical oxygen demand (COD).

(d) Radiological parameters will include gross alpha (once in high flow and once in low flow) and further testing as prescribed by the Environmental and Public Protection Cabinet if radioactivity is found.

(e) All chemicals and their by-products that will be involved in processing the shale will be identified by the applicant. The applicant shall recommend a monitoring plan for approval by the cabinet.

(5) Groundwater will be monitored for the same parameters as surface water with the exceptions of biochemical oxygen demand (BOD), chemical oxygen demand (COD) and dissolved oxygen (DO). Sampling will be performed on a biannual basis during periods of surface high flow and low flow regimes and accomplished by using test wells whose number and location will be determined by the site plan. The wells will be placed after the submission of the site plan and prior to the start-up of the operation.

(6) Water quantity will be assessed during minimum, maximum, and average discharge conditions to identify critical low flow and peak discharge rates of streams to identify seasonal variations.

(7) Aquatic flora and fauna will be sampled at a minimum of five (5) stations. These stations will include at least one (1) above the point source, one (1) at the point source, at least one (1) in the same stream below the point source and one (1) in the next order higher stream below the point source. The location of these stations and the duration of the data collection shall be recommended by the applicant for approval by the cabinet.

(a) Invertebrates will be sampled for qualitatively using a minimum of three (3) surber samples or three (3) samples collected using an equivalent methodology at a riffle at each station. If no riffles exist in the stream, then the pool at each station should be sampled by dredge.

(b) Fishes will be qualitatively sampled for at a pool and riffle at each station using small mesh minnow seines and portable electroshockers. For streams which contain pools with water depths greater than four (4) feet, this data will be supplemented by using gill or trammel nets.

(c) Aquatic macroflora will be qualitatively sampled along the stream between the upstream and downstream stations.

(d) Sampling and identification will be performed by qualified personnel acceptable to the Environmental and Public Protection Cabinet. The specimens will be identified at the collection site if possible and returned to place of capture unless record of species existence or further identification is needed whereupon the specimens will be deposited in a university museum or herbarium in the state.

(8) Terrestrial flora and fauna will be qualitatively sampled for species composition. The duration of data collection shall be recommended by the application for approval by the cabinet.

(a) Plant communities will be sampled to include canopy understory and ground cover. General age characteristics of forest communities will be assessed by either coring (preferably) or measuring the diameter breast high of three (3) of the largest trees and five (5) of the average size trees.

(b) Existing agencies should be utilized to determine if any federally listed, proposed or under review threatened or endangered plant or animal species are known on the proposed permit site or its vicinity and search shall be conducted for any species which could occur there. This search should take place at the peak flowering or activity season for each species which may be involved.

(c) Mammals should be sampled by randomly selecting three (3) plots per habitat type and trapping for four (4) nights with twenty-five (25) traps regularly placed in each plot. The plots should be selected from a grid based on twenty-five (25) x twenty-five (25) meters. The results should be reported in number of specimens per species per plot per season. Equivalent sampling techniques may be approved by the cabinet.

(d) Bird species should be observed for one (1) hour periods in early morning, midday, and late afternoon or early evening. The observations should take place within areas representative of each distinct habitat type. The results should be reported as number of individuals per species per unit time per season.

(e) Reptiles and amphibians should be searched for within areas representative of each distinct habitat type. The results should be reported in the same manner as the bird data.

(f) Wetlands, critical habitats and ecological areas which are off site but could be affected by the mining or processing should be identified.

(g) The data should be collected by qualified personnel acceptable to the Environmental and Public Protection Cabinet.

(h) All specimens of flora and fauna should be deposited at a university museum or herbarium in the state, in accordance with this administrative regulation.

(9) The following geologic and hydrologic data shall be submitted to the cabinet:

(a) Each application shall contain a description of the geology and hydrology of lands within the proposed permit area and adjacent areas. The description shall include information on the characteristics of surface and groundwaters within these areas, and any water which will flow into or receive discharges of water from these areas.

(b) Hydrologic data including water quality and quantity, and geologic data related to hydrology of areas outside the permit area and within the adjacent areas shall be submitted to the cabinet. This data may be obtained from appropriate federal or state agencies. If the cabinet determines that this data is not sufficient, the applicant will be required to collect such additional data as determined by the cabinet and submit it as part of the permit application.

(c) Geologic data shall include a general statement of the geology within the proposed permit area and adjacent areas down to and including the first aquifer which may be affected below the lowest oil shale stratum to be mined.

(d) Test borings or core samples from the proposed permit area shall be collected and analyzed down to and including the stratum immediately below the lowest oil shale stratum to be mined, to provide the following data:

1. Location of subsurface water, if encountered;
2. Logs of drill holes showing the lithologic characteristics and thickness of each stratum and each oil shale stratum;
3. Physical properties of each stratum within the overburden;
4. Chemical analyses of each stratum within the overburden, and including the stratum immediately below the lowest oil shale stratum to be mined to identify, at a minimum, those horizons which contain potential acid-forming, toxic-forming, or alkalinity producing materials; and,
5. Analyses of the oil shale stratum including, but not limited to, an analysis of the total sulfur and pyritic sulfur content.

(e) If required by the cabinet, geologic data shall be collected and analyzed to greater depths within the proposed permit area and adjacent areas to provide for evaluation of the impact of the proposed activities on the hydrologic balance.

(10) Historical, pedological, and archaeological data should be gathered from the appropriate agencies. Where insufficient data exists, the cabinet may require the applicant to collect such data. Where no archaeological information exists, a survey or prediction analysis should be done in accordance with current methods used by the Kentucky Heritage Council and the Office of State Archaeology.

Section 3. Technical and Engineering Data Requirements. (1) As determined by the applicant and approved by the cabinet, sampling and monitoring locations used in the collection of baseline data shall be operated by the applicant during the active life of the operation and thereafter as deemed necessary to assess the environmental impacts of the operation.

(2) The cabinet shall have the power to require the applicant to collect any technical or engineering data related to a specific oil shale operation as the cabinet deems necessary to assess the impacts of such activities on the environment and natural resources of the affected area. The parame-

ters to be monitored and the method of monitoring shall be determined on a case-by-case basis.

(3) Data and information required in this section shall be subject to the provisions of 405 KAR 30:150 relating to confidentiality.

Section 4. Variance Procedures. (1) The cabinet may authorize in writing such exceptions and variances to the requirements of this administrative regulation as the cabinet may deem necessary to reasonably and properly address site specific conditions. A written finding shall be made by the cabinet that the public and the environment will, in the administration of this variance, be provided adequate protection consistent with the purposes of KRS 350.600. The permittee shall publish a Notice of Intention to Request a Variance.

(2) Publication of notice of intention to request a variance. An applicant for a variance shall place an advertisement in the newspaper of largest bona fide circulation, according to the definition of KRS 424.110 to 424.120, in the county or counties wherein the proposed oil shale operation is to be located. The advertisement shall be published at least once each week for four (4) consecutive weeks with the first advertisement to be published not less than ten (10) nor more than thirty (30) days prior to the filing of the variance application with the cabinet. The public notice of intention to file an application for a variance shall be entitled "Notice of Intention to File for a Variance from Kentucky Oil Shale Mining Administrative Regulations" and shall be in a manner and form prescribed by the cabinet and shall include, but not be limited to the following:

- (a) The name and address of the applicant;
- (b) The permit or permit application number;
- (c) The location of the permit or proposed permit area;
- (d) A brief description of the kind of variance proposed together with a statement of the amount of acreage affected by the proposed variance and the number of the cabinet administrative regulation from which a variance is being sought;
- (e) The address of the cabinet to which interested persons may submit written comments on the variance; and
- (f) The location where a copy of the variance application is available for public inspection.

(3) The applicant for a variance shall establish the date and place at which the "Notice of Intention to File for a Variance from Kentucky Oil Shale Mining Administrative Regulations" was published by attaching to his application an affidavit from the publishing newspaper certifying the time, place, and content of the published notices. The applicant shall make a full copy of the complete application for a variance available for the public to inspect and copy. This shall be done by filing a copy of the variance submitted to the cabinet at the courthouse of the county or counties where the mining is proposed to occur. Any person with an interest which is or may be adversely affected shall have the right to file with the cabinet written comments on the application for a variance within thirty (30) days of the final publication in the newspaper.

(4) If the data requirements listed in this administrative regulation duplicate regulation requirements of other federal or state permits, a completed copy of the reporting form supplied to meet the requirements of the federal or state permit may be submitted to the cabinet to replace the duplicated portions of this administrative regulation. The submission of this data will satisfy the requirements of the duplicated portions of this administrative regulation, provided the applicant has requested such in writing and the cabinet has approved the request. The applicant's request for exception of duplicated requirements will not be subject to the requirement to publish a Notice of Intention to Request a Variance. (9 Ky.R. 983; Am. 10 Ky.R. 286; 757; eff. 11-2-83; TAm eff. 8-9-2007.)